

WE CLAIM:

1. A method of well planning in a well planning system in response to input data
5 including wellbore geometry and wellbore trajectory requirements, comprising the step of:

generating a summary of a drillstring in each hole section of a wellbore in response to said input data.

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2. The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore comprises the step of:

generating an outer diameter of a first drill collar of said drillstring.

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3. The method of claim 1, wherein the the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating an outer diameter of a second drill collar of said drillstring.

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4. The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating an outer diameter of a heavy weight of said drillstring.

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5. The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating an outer diameter of a drill pipe of said drillstring.

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6. The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a maximum weight of a weight-on-bit in each hole section of said drill string.

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7. The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a weight of a first drill collar of said drillstring.

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8. The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a weight of a second drill collar of said drillstring.

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9. The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a weight of a heavy weight of said drillstring.

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10. The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a length of a first drill collar of said drillstring.

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11. The method of claim 1, wherein the the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a length of a second drill collar of said drillstring.

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12. The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a length of a heavy weight of said drillstring.

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13. The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a length of a drill pipe of said drillstring.

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14. The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a tensile risk of said drillstring.

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15. The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a cost figure associated with said drillstring.

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16. The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a kick tolerance associated with said drillstring.

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17. The method of claim 2, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating an outer diameter of a second drill collar of said drillstring.

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18. The method of claim 17, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating an outer diameter of a heavy weight of said drillstring.

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19. The method of claim 18, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating an outer diameter of a drill pipe of said drillstring.

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20. The method of claim 19, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a maximum weight of a weight-on-bit in each hole section of said drill string.

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21. The method of claim 20, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a weight of a first drill collar of said drillstring.

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22. The method of claim 21, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a weight of a second drill collar of said drillstring.

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23. The method of claim 22, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a weight of a heavy weight of said drillstring.

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24. The method of claim 23, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a length of a first drill collar of said drillstring.

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25. The method of claim 24, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a length of a second drill collar of said drillstring.

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26. The method of claim 25, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a length of a heavy weight of said drillstring.

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27. The method of claim 26, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a length of a drill pipe of said drillstring.

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28. The method of claim 27, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a tensile risk of said drillstring.

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29. The method of claim 28, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a cost figure associated with said drillstring.

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30. The method of claim 29, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a kick tolerance associated with said drillstring.

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31. A program storage device readable by a machine tangibly embodying a program of instructions executable by the machine to perform method steps for well planning in a well planning system in response to input data including wellbore geometry and wellbore trajectory requirements, said method steps comprising:

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generating a summary of a drillstring in each hole section of a wellbore in response to said input data.

32. The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore comprises the step of:

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generating an outer diameter of a first drill collar of said drillstring.

33. The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

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generating an outer diameter of a second drill collar of said drillstring.

34. The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

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generating an outer diameter of a heavy weight of said drillstring.

35. The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of:

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generating an outer diameter of a drill pipe of said drillstring.

36. The program storage device of claim 31, wherein the step of generating a summary of
5 a drillstring in each hole section of a wellbore further comprises the step of:

generating a maximum weight of a weight-on-bit in each hole section of said drill string.

37. The program storage device of claim 31, wherein the step of generating a summary of
10 a drillstring in each hole section of a wellbore further comprises the step of:

generating a weight of a first drill collar of said drillstring.

38. The program storage device of claim 31, wherein the step of generating a summary of
15 a drillstring in each hole section of a wellbore further comprises the step of:

generating a weight of a second drill collar of said drillstring.

39. The program storage device of claim 31, wherein the step of generating a summary of
20 a drillstring in each hole section of a wellbore further comprises the step of:

generating a weight of a heavy weight of said drillstring.

40. The program storage device of claim 31, wherein the step of generating a summary of
25 a drillstring in each hole section of a wellbore further comprises the step of:

generating a length of a first drill collar of said drillstring.

41. The program storage device of claim 31, wherein the the step of generating a
30 summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a length of a second drill collar of said drillstring.

42. The program storage device of claim 31, wherein the step of generating a summary of
5 a drillstring in each hole section of a wellbore further comprises the step of:

generating a length of a heavy weight of said drillstring.

43. The program storage device of claim 31, wherein the step of generating a summary of
10 a drillstring in each hole section of a wellbore further comprises the step of:

generating a length of a drill pipe of said drillstring.

44. The program storage device of claim 31, wherein the step of generating a summary of
15 a drillstring in each hole section of a wellbore further comprises the step of:

generating a tensile risk of said drillstring.

45. The program storage device of claim 31, wherein the step of generating a summary of
20 a drillstring in each hole section of a wellbore further comprises the step of:

generating a cost figure associated with said drillstring.

46. The program storage device of claim 31, wherein the step of generating a summary of
25 a drillstring in each hole section of a wellbore further comprises the step of:

generating a kick tolerance associated with said drillstring.

47. The program storage device of claim 32, wherein the step of generating a summary of
30 a drillstring in each hole section of a wellbore further comprises the step of:

generating an outer diameter of a second drill collar of said drillstring.

48. The program storage device of claim 47, wherein the step of generating a summary of
5 a drillstring in each hole section of a wellbore further comprises the step of:

generating an outer diameter of a heavy weight of said drillstring.

49. The program storage device of claim 48, wherein the step of generating a summary of
10 a drillstring in each hole section of a wellbore further comprises the step of:

generating an outer diameter of a drill pipe of said drillstring.

50. The program storage device of claim 49, wherein the step of generating a summary of
15 a drillstring in each hole section of a wellbore further comprises the step of:

generating a maximum weight of a weight-on-bit in each hole section of said drill string.

51. The program storage device of claim 50, wherein the step of generating a summary of
20 a drillstring in each hole section of a wellbore further comprises the step of:

generating a weight of a first drill collar of said drillstring.

52. The program storage device of claim 51, wherein the step of generating a summary of
25 a drillstring in each hole section of a wellbore further comprises the step of:

generating a weight of a second drill collar of said drillstring.

53. The program storage device of claim 52, wherein the step of generating a summary of
30 a drillstring in each hole section of a wellbore further comprises the step of:

generating a weight of a heavy weight of said drillstring.

54. The program storage device of claim 53, wherein the step of generating a summary of
5 a drillstring in each hole section of a wellbore further comprises the step of:

generating a length of a first drill collar of said drillstring.

55. The program storage device of claim 54, wherein the the step of generating a
10 summary of a drillstring in each hole section of a wellbore further comprises the step of:

generating a length of a second drill collar of said drillstring.

56. The program storage device of claim 55, wherein the step of generating a summary of
15 a drillstring in each hole section of a wellbore further comprises the step of:

generating a length of a heavy weight of said drillstring.

57. The program storage device of claim 56, wherein the step of generating a summary of
20 a drillstring in each hole section of a wellbore further comprises the step of:

generating a length of a drill pipe of said drillstring.

58. The program storage device of claim 57, wherein the step of generating a summary of
25 a drillstring in each hole section of a wellbore further comprises the step of:

generating a tensile risk of said drillstring.

59. The program storage device of claim 58, wherein the step of generating a summary of
30 a drillstring in each hole section of a wellbore further comprises the step of:

generating a cost figure associated with said drillstring.

60. The program storage device of claim 59, wherein the step of generating a summary of
5 a drillstring in each hole section of a wellbore further comprises the step of:

generating a kick tolerance associated with said drillstring.

61. The method of claim 1, further comprising the step of:
10 recording or displaying at least a portion of said summary of said drillstring in said each
hole section of said wellbore on a recorder or display device.

62. The method of claim 61, wherein the step of recording or displaying at least a portion
15 of said summary of said drillstring in said each hole section of said wellbore on a recorder
or display device is selected from a group consisting of:

recording or displaying an outer diameter of a first drill collar of said drillstring;

20 recording or displaying an outer diameter of a second drill collar of said drillstring;

recording or displaying an outer diameter of a heavy weight of said drillstring;

recording or displaying an outer diameter of a drill pipe of said drillstring;
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recording or displaying a maximum weight of a weight-on-bit in each hole section of said
drill string;

recording or displaying a weight of a first drill collar of said drillstring;
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recording or displaying a weight of a second drill collar of said drillstring;

recording or displaying a weight of a heavy weight of said drillstring;

recording or displaying a length of a first drill collar of said drillstring;

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recording or displaying a length of a second drill collar of said drillstring;

recording or displaying a length of a heavy weight of said drillstring;

10 recording or displaying a length of a drill pipe of said drillstring;

recording or displaying a tensile risk of said drillstring;

recording or displaying a cost figure associated with said drillstring; and

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recording or displaying a kick tolerance associated with said drillstring.

63. The program storage device of claim 31, further comprising the step of:

20 recording or displaying at least a portion of said summary of said drillstring in said each hole section of said wellbore on a recorder or display device.

64. The program storage device of claim 62, wherein the step of recording or displaying at least a portion of said summary of said drillstring in said each hole section of said

25 wellbore on a recorder or display device is selected from a group consisting of:

recording or displaying an outer diameter of a first drill collar of said drillstring;

recording or displaying an outer diameter of a second drill collar of said drillstring;

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recording or displaying an outer diameter of a heavy weight of said drillstring;

recording or displaying an outer diameter of a drill pipe of said drillstring;

- 5 recording or displaying a maximum weight of a weight-on-bit in each hole section of said drill string;

recording or displaying a weight of a first drill collar of said drillstring;

- 10 recording or displaying a weight of a second drill collar of said drillstring;

recording or displaying a weight of a heavy weight of said drillstring;

recording or displaying a length of a first drill collar of said drillstring;

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recording or displaying a length of a second drill collar of said drillstring;

recording or displaying a length of a heavy weight of said drillstring;

- 20 recording or displaying a length of a drill pipe of said drillstring;

recording or displaying a tensile risk of said drillstring;

recording or displaying a cost figure associated with said drillstring; and

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recording or displaying a kick tolerance associated with said drillstring.

65. A method of generating and recording or displaying drillstring design output data associated with a drillstring in a wellbore in response to input data including wellbore geometry and wellbore trajectory requirements, comprising the steps of:

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generating a summary of the drillstring in each hole section of a wellbore in response to said input data, the summary of the drillstring in each hole section of said wellbore being selected from a group consisting of: an outer diameter of a first drill collar of said drillstring, an outer diameter of a second drill collar of said drillstring, an outer diameter of a heavy weight of said drillstring, an outer diameter of a drill pipe of said drillstring, a maximum weight of a weight-on-bit in each hole section of said drill string, a weight of a first drill collar of said drillstring, a weight of a second drill collar of said drillstring, a weight of a heavy weight of said drillstring, a length of a first drill collar of said drillstring, a length of a second drill collar of said drillstring, a length of a heavy weight of said drillstring, a length of a drill pipe of said drillstring, a tensile risk of said drillstring, a cost figure associated with said drillstring, and a kick tolerance associated with said drillstring; and

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recording or displaying said summary of said drill string in said each hole section of said wellbore.

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66. A program storage device readable by a machine tangibly embodying a program of instructions executable by the machine to perform method steps for generating and recording or displaying drillstring design output data associated with a drillstring in a wellbore in response to input data including wellbore geometry and wellbore trajectory requirements, said method steps comprising:

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generating a summary of the drillstring in each hole section of a wellbore in response to said input data, the summary of the drillstring in each hole section of said wellbore being selected from a group consisting of: an outer diameter of a first drill collar of said

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drillstring, an outer diameter of a second drill collar of said drillstring, an outer diameter of a heavy weight of said drillstring, an outer diameter of a drill pipe of said drillstring, a maximum weight of a weight-on-bit in each hole section of said drill string, a weight of a first drill collar of said drillstring, a weight of a second drill collar of said drillstring, a weight of a heavy weight of said drillstring, a length of a first drill collar of said drillstring, a length of a second drill collar of said drillstring, a length of a heavy weight of said drillstring, a length of a drill pipe of said drillstring, a tensile risk of said drillstring, a cost figure associated with said drillstring, and a kick tolerance associated with said drillstring; and

recording or displaying said summary of said drill string in said each hole section of said wellbore.

67. A system adapted for generating and recording or displaying drillstring design output data associated with a drillstring in a wellbore in response to input data including wellbore geometry and wellbore trajectory requirements, comprising:

apparatus adapted for generating a summary of the drillstring in each hole section of a wellbore in response to said input data, the summary of the drillstring in each hole section of said wellbore being selected from a group consisting of: an outer diameter of a first drill collar of said drillstring, an outer diameter of a second drill collar of said drillstring, an outer diameter of a heavy weight of said drillstring, an outer diameter of a drill pipe of said drillstring, a maximum weight of a weight-on-bit in each hole section of said drill string, a weight of a first drill collar of said drillstring, a weight of a second drill collar of said drillstring, a weight of a heavy weight of said drillstring, a length of a first drill collar of said drillstring, a length of a second drill collar of said drillstring, a length of a heavy weight of said drillstring, a length of a drill pipe of said drillstring, a tensile risk of said drillstring, a cost figure associated with said drillstring, and a kick tolerance associated with said drillstring; and recorder or display apparatus adapted for recording or displaying said summary of said drill string in said each hole section of said wellbore.